

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) Process for manufacturing a composite tape based on reinforcing fibres and on a thermoplastic organic material, consisting in bringing together and in consolidating a multiplicity of continuous yarns, characterized in that:

yarns based on thermoplastic and reinforcing fibres are entrained and brought together in a parallel manner in the form of a sheet;

said sheet is made to enter a zone in which the sheet is heated to a temperature reaching at least the melting point of the thermoplastic without reaching the softening temperature of the reinforcing fibres;

the sheet is made to pass through a rotating impregnation device including heated rollers ~~having heating elements therein~~, while maintaining the sheet at a temperature at which the thermoplastic is malleable, in order to distribute the molten thermoplastic uniformly and guarantee that the reinforcing fibres are completely impregnated by the latter;

all of the multiplicity of yarns of the sheet pass through a heating zone after the sheet has passed through the rotating impregnation device;

the sheet is introduced into a shaping and centring device including a roller in a shape of a hyperboloid, while maintaining the sheet at a temperature at which the thermoplastic is malleable, so as to obtain a tape formed by bringing the yarns together so as to be touching, thereby creating transverse continuity;

the tape is cooled in order to consolidate the yarns by freezing the thermoplastic and dimensional characteristics of the tape and appearance of the tape are set in order to deliver

said composite tape.

2. (Previously Presented) Process according to Claim 1, characterized in that the yarns that are brought together consist of continuous glass filaments and continuous thermoplastic filaments which are co-mingled.

3. (Currently Amended) Process ~~according to Claim 1, characterized in that it~~ consists in unreeling, from wound packages, a continuous yarn of reinforcing filaments and thermoplastic filaments and, while the yarns are being brought together in the form of a sheet, in regulating the tension in the yarns for manufacturing a composite tape based on reinforcing fibres and on a thermoplastic organic material, consisting in bringing together and in consolidating a multiplicity of continuous yarns, characterized in that:

yarns based on thermoplastic and reinforcing fibres are entrained and brought together in a parallel manner in the form of a sheet;

the tension in the yarns is regulated while the yarns are being brought together in the form of the sheet;

said sheet is made to enter a zone in which the sheet is heated to a temperature reaching at least the melting point of the thermoplastic without reaching the softening temperature of the reinforcing fibres;

the sheet is made to pass through a rotating impregnation device including heated rollers, while maintaining the sheet at a temperature at which the thermoplastic is malleable, in order to distribute the molten thermoplastic uniformly and guarantee that the reinforcing fibres are completely impregnated by the latter;

the sheet is introduced into a shaping and centring device including a roller in a shape

of a hyperboloid, while maintaining the sheet at a temperature at which the thermoplastic is malleable, so as to obtain a tape formed by bringing the yarns together so as to be touching, thereby creating transverse continuity;

the tape is cooled in order to consolidate the yarns by freezing the thermoplastic and dimensional characteristics of the tape and appearance of the tape are set in order to deliver said composite tape.

4. (Currently Amended) Process according to claim 1, characterized in that for manufacturing a composite tape based on reinforcing fibres and on a thermoplastic organic material, consisting in bringing together and in consolidating a multiplicity of continuous yarns, characterized in that:

yarns based on thermoplastic and reinforcing fibres are entrained and brought together in a parallel manner in the form of a sheet;

the yarns are stripped of any static electricity before the sheet passes into the heating zone;

said sheet is made to enter a zone in which the sheet is heated to a temperature reaching at least the melting point of the thermoplastic without reaching the softening temperature of the reinforcing fibres;

the sheet is made to pass through a rotating impregnation device including heated rollers, while maintaining the sheet at a temperature at which the thermoplastic is malleable, in order to distribute the molten thermoplastic uniformly and guarantee that the reinforcing fibres are completely impregnated by the latter;

the sheet is introduced into a shaping and centring device including a roller in a shape

of a hyperboloid, while maintaining the sheet at a temperature at which the thermoplastic is malleable, so as to obtain a tape formed by bringing the yarns together so as to be touching, thereby creating transverse continuity;

the tape is cooled in order to consolidate the yarns by freezing the thermoplastic and dimensional characteristics of the tape and appearance of the tape are set in order to deliver said composite tape.

5. (Canceled)

6. (Previously Presented) Process according to Claim 1, characterized in that, at the end of the manufacturing line, the tape is wound up in the form of a reel for storing it.

7.-19. (Canceled)

20. (Currently Amended) A process for manufacturing a composite tape, said process comprising the steps of:

entraining and bringing together a multiplicity of yarns based on thermoplastic organic material and reinforcing fibres in a parallel manner to form a sheet;

heating the sheet by entering the sheet into a heating zone in which the sheet is heated to a temperature of at least a melting point temperature of the thermoplastic and less than a softening temperature of the reinforcing fibres;

passing the sheet through a rotating impregnation device including heated rollers ~~having heating elements therein~~, while maintaining the sheet at a temperature at which the thermoplastic is malleable, ~~so as to ensure that molten thermoplastic is distributed uniformly and guarantee that the reinforcing fibres are completely impregnated by the molten thermoplastic;~~

passing all of the multiplicity of yarns of the sheet through a heating zone after the sheet has passed through the rotating impregnation device;

bringing the multiplicity of yarns together so as to be touching using a shaping and centering device including a roller in a shape of a hyperboloid, while maintaining the sheet at a temperature at which the thermoplastic is malleable, ~~so as to obtain a tape having transverse continuity;~~ and

cooling the tape in order to consolidate the multiplicity of yarns by freezing the thermoplastic.

21. (Previously Presented) The process according to Claim 20, wherein the multiplicity of yarns comprise continuous glass filaments and continuous thermoplastic filaments that are co-mingled.

22. (Currently Amended) ~~The A process according to Claim 20, further comprising the steps of unreeling a continuous yarn of reinforcing filaments and thermoplastic filaments; and~~ for manufacturing a composite tape, said process comprising the steps of:

entraining and bringing together a multiplicity of yarns based on thermoplastic organic material and reinforcing fibres in a parallel manner to form a sheet;

regulating tension in ~~the~~ a continuous yarn while the multiplicity of yarns are being brought together to form the sheet;

heating the sheet by entering the sheet into a heating zone in which the sheet is heated to a temperature of at least a melting point temperature of the thermoplastic and less than a softening temperature of the reinforcing fibres;

passing the sheet through a rotating impregnation device including heated rollers,

while maintaining the sheet at a temperature at which the thermoplastic is malleable;

bringing the multiplicity of yarns together so as to be touching using a shaping and centering device including a roller in a shape of a hyperboloid, while maintaining the sheet at a temperature at which the thermoplastic is malleable; and

cooling the tape in order to consolidate the multiplicity of yarns by freezing the thermoplastic.

23. (Currently Amended) ~~The A process according to Claim 20, further comprising~~
for manufacturing a composite tape, said process comprising the steps of:

entraining and bringing together a multiplicity of yarns based on thermoplastic organic material and reinforcing fibres in a parallel manner to form a sheet;

stripping the multiplicity of yarns of static electricity before the sheet enters the heating zone;

heating the sheet by entering the sheet into a heating zone in which the sheet is heated to a temperature of at least a melting point temperature of the thermoplastic and less than a softening temperature of the reinforcing fibres;

passing the sheet through a rotating impregnation device including heated rollers, while maintaining the sheet at a temperature at which the thermoplastic is malleable;

bringing the multiplicity of yarns together so as to be touching using a shaping and centering device including a roller in a shape of a hyperboloid, while maintaining the sheet at a temperature at which the thermoplastic is malleable; and

cooling the tape in order to consolidate the multiplicity of yarns by freezing the thermoplastic.

24. (Canceled)

25. (Previously Presented) The process according to Claim 20, further comprising the step of winding the composite tape in a form of a reel.

26. (Previously Presented) The process according to Claim 20, wherein said step of cooling the tape sets the dimensional and aesthetic characteristics of the composite tape.

27. (New) The process according to Claim 20, wherein the cooling of the tape includes immersing the tape in a water bath.

28. (New) The process according to Claim 20, wherein the heated rollers are driven at a lower speed of rotation than a speed at which the sheet is traveling.

29. (New) Process according to claim 1, wherein the tape is cooled by immersing the tape in a water bath.

30. (New) Process according to claim 1, wherein the heated rollers are driven at a lower speed of rotation than a speed at which the sheet is traveling.